

JANET K. JANSSON**Professor and Senior Staff Scientist, Molecular Microbial Ecology Group**

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Biographical Summary

Professor Jansson received her Ph.D. in Microbial Ecology from Michigan State University. She spent 20 years in Sweden, starting with her postdoctoral research at Stockholm University. She was a Professor of Microbiology at Södertörn University College and then Professor (Chair) of Environmental Microbiology at the Swedish University of Agricultural Sciences (SLU). She was also Vice Dean of the Faculty for Natural Resources and Agricultural Sciences at SLU. She is currently a Senior Staff Scientist in the Earth Sciences Division and a Chief Editor of The ISME Journal. Her expertise is in the area of molecular microbial ecology and “omics” approaches with a focus on soil, marine sediment and the human gut environments.

Education

New Mexico State University	B.S. Biology & Soil Science	1980
Colorado State University	M.S. Soil Microbiology	1983
Michigan State University	Ph.D. Microbial Ecology	1988
Stockholm University	Postdoc. Biochemistry	1991

Professional experience

2007-present	Senior Staff Scientist, Earth Sciences Division, LBNL, Berkeley, CA
2003-present	Professor (Chair) of Environmental Microbiology, SLU, Uppsala, Sweden
2006-2007	Vice Dean (25%), Swedish University of Agricultural Sciences (SLU), Uppsala
2000-2002	Professor of Microbiology, Södertörn University College, Sweden
1998-1999	Associate Professor, Södertörn University College, Sweden
1996-1997	Assistant Professor, Stockholm University, Sweden

Selected activities

- Conference Organizer: 10th International Symposium on Bacterial Genetics and Ecology (BAGECO-10), Uppsala, Sweden. June 15-19, 2009. <http://www-conference.slu.se/bageco/>
- Steering Committee and Workshop Organizer: TerraGenome: International Consortium on Soil Metageonomics. http://terragenome.org/index.php/Main_Page
- Session Chairman and Discussion Leader: Gordon Research Conference on Applied and Environmental Microbiology. July 12-17, 2009. MA.
- Coordinator of the Strategic Research Network: Uppsala Microbiomics Center (www.microbiomics.se), with 6 partners from SLU and Uppsala University; funded by the Swedish Research Council, FORMAS 2005-2010.
- Coordinator of an EU project (Marker reporter genes in microbial ecology, MAREP) funded by the European Commission with 26 partners from 11 different countries (1997-1999)
- Editor: Van Elsas, J.D. J.K. Jansson and J.T. Trevors (eds). 2007. Modern Soil Microbiology, 2nd Edition. CRC Press, Taylor and Francis Group, New York. 646 pp.
- Editor: Liu, W.-T. and J.K. Jansson (eds). 2009. Environmental Molecular Microbiology. Caister Academic Press (in press).
- Editor: The ISME Journal (from 2009)
- Current member of Editorial Boards: Applied and Environmental Microbiology, Environmental Microbiology, FEMS Microbiology Ecology, The ISME Journal.
- Elected to the board of the Swedish Gene Technology Advisory Board (2000-2006)

- Member of the Swedish Royal Academy of Sciences, National Committee for Biology (>2006)
- Recipient of a highly competitive *Junior Individual Grant* from the Swedish Foundation for Strategic Research, SSF (1997-1999)
- Frequently invited keynote speaker at international conferences (approximately 5 times/year)

Research Support

- US Department of Energy, LDRD: “Microbiomics of complex communities in environmental samples”. 2007-2010. Jansson (PI).
- Swedish Research Council for the Environment, Agricultural Sciences and Spatial Planning, FORMAS. “*Microbiomics for Agriculture, Forestry and Freshwater Management: A strong research environment in Uppsala*”. 2005-2010. Jansson (Original project coordinator and PI; Sara Hallin project coordinator, since 2007). Co-PIs: Jan Stenlid (SLU), Klas Hjort (Uppsala U.), Rolf Bernander (Uppsala U.), Stefan Bertilsson (Uppsala U.)
- DOE- Joint Genome Institute (JGI): *Community Sequencing Project: “Metagenomics of permafrost soil microbiota – implications for climate change”* Goal: Metagenomic sequencing of Alaskan permafrost soil. 2010. Mark Waldrop (PI); J. Jansson, E. Brodie and K. DeAngelis (Co-PIs)
- European Commission: “*METAEXPLORE –Metagenomics for bioexploration – Tools and application*” Goal: To investigate soil microbial communities using metagenomics. 2008-2010. Jansson Co-PI with PI Sara Sjoling (Sodertorn University College, Sweden). In addition, Co-PIs from 8 other countries including J.D. van Elsas (The Netherlands) as Project Coordinator.
- Swedish University of Agricultural Sciences (SLU): “*BarleyFunFood – exploiting the barley endosperm as a resource for functional food*” Goal: to investigate the prebiotic impact of resistant barley starch on the gut microbiota. 2008-2010. Jansson (Co-PI), with Prof. Per Aman (SLU) as coordinator.
- British Petroleum Energy Biosciences Institute: Microbially Enhanced Hydrocarbon Recovery (MEHR)- Systems Biology Program. 2009 – 2019. Role: Co-PI with other LBNL staff: Terry Hazen, Harry Beller, Gary Andersen and Eoin Brodie.
- US National Institute of Health: Metagenomic Analysis of the Structure and Function of the Human Gut Microbiota in Crohn's Disease. 2009-2010. Role, Co-PI with Claire Fraser-Liggett (Univ. of Maryland, USA).

Completed Research Support (last 5 years)

Swedish Foundation for Strategic Research, European Commission (3 projects), Swedish Foundation for Strategic Environmental Research, FORMAS (2 projects), Baltic Sea Foundation

Supervision of post doctoral fellows

- Two postdocs being recruited
- Johan Dicksved [2008-2010]
- Benjamin Willing [2007-2008]
- Joakim Bjerketorp [2004-2007]
- Karin Hjort [2002-2006]
- Maria Bergström [2004-2005]
- Magnus Rosenquist [2005-2007]
- Riccardo Tombolini [2004]
- Bernd-Uwe Barth [2001-2003]
- Zexun Lu [2000-2003]

- Elisabeth Johansson [2002-2003]

Current supervision of Ph.D. students

- Gabriella Wessen (co-supervisor; Sara Hallin head supervisor, SLU, Uppsala, Sweden)
- Hedvig Jakobsson (co-supervisor; Lars Engstrand head supervisor, KI, Stockholm, Sweden)
- Maude David (visiting Ph.D. student, Tim Vogel head supervisor, Lyon, France)

Completed Ph.D. and M.S. (Lisc.) degrees under supervision of J.K. Jansson

- Johan Dicksved (Ph.D.) 2008. Exploring the human intestinal microbiome in health and disease.
- Maria Unell (Ph.D.) 2008. Physiological, genetic and proteomic characterization of *Arthrobacter chlorophenolicus* during growth on different phenolic substrates or temperatures.
- Lotta Jäderlund (Ph.D.) 2008. Fates and impacts of the genetically modified plant growth-promoting bacterium *Pseudomonas fluorescens* SBW25.
- Anna Edlund (Ph.D.) 2007. Microbial diversity in Baltic Sea sediments.
- Ninwe Maraha (Ph.D.) 2007. Physiological status of bacteria used for environmental applications.
- Cecilia Jernberg (Ph.D.) 2006. Use of microbiomics to study human impacts on complex microbial communities.
- Veronica Artursson (Ph.D.) 2005. Bacterial-fungal interactions highlighted using microbiomics.
- Karolina Westerberg (Ph.D.) 2004. 4-Chlorophenol biodegradation by *Arthrobacter chlorophenolicus* A6.
- Ninwe Maraha (Lisc.) 2004. Studies of the physiological status of bacteria used for environmental applications.
- Agneta Backman (Lisc.) 2004. Optimization of bacterial inoculants for environmental biotechnology applications.
- Annika Unge (Ph.D.) 2000. Marker genes: Molecular tools for in situ monitoring of bacterial distribution and activity in environmental samples.
- Annika Unge (Lisc.) 1998. Development of molecular marker systems for quantification of specific bacterial populations.
- Annelie Elväng (Ph.D.) 1998. Quantitative monitoring of microorganisms in environmental samples using biomarkers.

Publication list (Last 8 years; out of approximately 88 peer reviewed publications)

- Jansson, J. K., B. Willing, M. Lucio, A. Fekete, J. Dicksved, J. Halfvarson, C. Tysk, and P. Schmitt-Kopplin (2009) Metabolomics reveals metabolic biomarkers of Crohn's disease. LBNL-2153. PLoS One. 4 (7):1-10 (e6386). LBNL-2153
- Zhigang, Wu, B. Willing, J. Bjerketorp, J.K. Jansson and K. Hjort. 2009. Soft inertial microfluidics for high throughput separation of bacteria from human blood cells. Lab on a Chip. 9:1193-1199. LBNL-1539E.
- Vogel, T.M., P. Simonet, J.K. Jansson, P.R. Hirsch, J.M. Tiedje, J.D. van Elsas, M. J. Bailey, R. Nalin L. Philippot (2009). TerraGenome: a consortium for the sequencing of a soil metagenome. Nature Reviews Microbiology.7:1
- Unell, M., P. E. Abraham, M. Shah, B. Zhang, C. Ruckert, N.C. VerBerkmoes and J. Jansson. 2009. Impact of phenolic substrate and growth temperature on the *Arthrobacter* proteome. J.Proteome Res. 8:1953-1964. LBNL-1565E.
- Willing, B., J. Halfvarson, J. Dicksved, M. Rosenquist, G. Jarnerot, L. Engstrand, C. Tysk and J.K. Jansson. 2009. Twin studies reveal specific imbalances in the mucosa-associated microbiota of patients with ileal Crohn's disease. Inflammatory Bowel Diseases. 15:653-660. LBNL-1222E.

- Dicksved, J., M. Lindberg, M. Rosenquist, H. Enroth, J.K. Jansson and L. Engstrand. 2009. Molecular Characterization of the Stomach Microbiota in Patients With Gastric Cancer and Controls. *Journal of Medical Microbiology*. 58:509-516. LBNL-1632E
- VerBerkmoes, N.C., A.L. Russell, M. Shah, A. Godzik, M. Rosenquist, J. Halfvarson, M.G. Lefsrud, J. Apajalahti, C. Tysk, R.L.Hettich and J.K. Jansson. 2009. Shotgun metaproteomics of the human distal gut microbiota. *The ISME Journal*. 3:179-189. LBNL-1134E.
- Jäderlund, L. M. Hellman, I. Sundh, M. Bailey and J.K. Jansson. 2008. Use of a novel non-antibiotic triple marker gene cassette to monitor high survival of *Pseudomonas fluorescens* SBW25 on winter wheat in the field. *FEMS Microbiology Ecology*. 63:156-168.
- Unell, M., K. Nordin, C. Jernberg, J. Stenström and J.K. Jansson. 2008. Degradation of mixtures of phenolic compounds by *Arthrobacter chlorophenolicus* A6. *Biodegradation* 19:495-505.
- Bjerketorp, J. A.N.T. Chiang, K. Hjort, M. Rosenquist, W-T. Liu and J.K. Jansson. 2008. Rapid lab-on-a-chip profiling of human gut bacteria. *Journal of Microbiological Methods*. 72:82-90.
- Jäderlund, L., V. Arthurson, U. Granhall and J.K. Jansson. 2008. Specific interactions between arbuscular mycorrhizal fungi and plant growth/promoting bacteria as revealed by different combinations. *FEMS Microbiology Letters*. 287:174-180. LBNL-920E.
- Edlund, A., F. Hårdeman, J.K. Jansson and S. Sjöling. 2008. Active bacterial community structure along vertical redox gradients in Baltic Sea sediment. *Environmental Microbiology* 10:2051-2063. LBNL-711E.
- Edlund, A. and J.K. Jansson. 2008. Use of bromodeoxyuridine immunocapture to identify psychrotolerant phenanthrene-degrading bacteria in phanthrene-enriched polluted Baltic Sea sediments. *FEMS Microbiology Ecology*. 65:513-525. LBNL-1538E
- Van Elsas, J.D., J. Jansson, S. Sjöling, M. Bailey, R. Nalin, T. Vogel, R. Costa and L.V. Overbeek. 2008. The soil metagenome—a recalcitrant, yet explorable goldmine for gene hunters. *Trends in Biotech*. 26:591-691.
- Dicksved, J., J. Halfvarson, M. Rosenquist, G. Järnerot, C. Tysk, J. Apajalahti, L. Engstrand and J.K. Jansson. 2008. Molecular analysis of the gut microbiota of identical twins with Crohn's disease. *The ISME Journal* .2:716-727. LBNL-197E.
- Jernberg, C., S. Löfmark, C. Edlund and J.K. Jansson. 2007. Long-term ecological impacts of antibiotic administration on the human intestinal microbiota. *The ISME Journal*. 1:56-66.
- Steger, K., Å.M. Sjögren, Å. Jarvis, J.K. Jansson and I. Sundh. 2007. Development of compost maturity and Actinobacteria populations during full-scale composting of organic household waste. *Journal of Applied Microbiology*. 103:487-498.
- Hjort, K., A. Lembke, A. Speksnijder, K. Smalla and J.K. Jansson. 2007. Community structure of actively growing bacterial populations in plant pathogen suppressive soil. *Microbial Ecology*. 53:399-413.
- Dicksved, J., H. Flöistrup, A. Bergström, M. Rosenquist, G. Pershagen, A. Scheynius, S. Roos, J.S. Alm, L. Engstrand, C. Braun-Fahrländer, E. von Mutius and J.K. Jansson. 2007. Molecular fingerprinting of the fecal microbiota of children raised according to different lifestyles. *Applied and Environmental Microbiology*. 73:2284-2289.
- Unell, M., N. Kabelitz, J. Jansson and H. Heipieper. 2007. Adaptation of the psychrotroph *Arthrobacter chlorophenolicus* A6 to growth temperature and the presence of phenols by changes in the anteiso/iso ration of branched fatty acids. *FEMS Microbiology Letters*. 266:138-143.
- Toljander, J., V. Artursson, L.R. Paul, J.K. Jansson and R.D. Finlay. 2006. Attachment of different soil bacteria to arbuscular mycorrhizal fungal extraradical hyphae is determined by hyphal vitality and fungal species. *FEMS Microbiology Letters*. 254:34-40.

- Lofmark, S., C. Jernberg, J. Jansson and C. Edlund. 2006. Clindamycin induced enrichment and long term persistence of resistant *Bacteroides* spp. and resistance genes. *Journal of Antimicrobial Chemotherapy*. 58:1160-1167.
- Edlund, A., T. Soule, S. Sjöling and J.K. Jansson. 2006. Microbial community structure in Baltic Sea sediment along a pollution gradient. *Environmental Microbiology*. 8:223-232.
- Edlund, A. and J.K. Jansson. 2006. Changes in active bacterial communities before and after dredging of highly polluted Baltic Sea sediments. *Applied and Environmental Microbiology* 72:6800-6807.
- Bjerketorp, J., S. Håkansson, S. Belkin and J.K. Jansson. 2006. Advances in preservation methods: how to keep microbial biosensors alive and active? *Current Opinion in Biotechnology*. 17:43-49.
- Artursson, V. R. Finlay and J.K. Jansson. 2006. Interactions between arbuscular mycorrhizal fungi and bacteria and their potential for stimulating plant growth. *Environmental Microbiology*. 8:1-10.
- Nordin, K., M. Unell and J.K. Jansson. 2005. A novel 4-chlorophenol degradation gene cluster and degradation route via hydroxyquinol in *Arthrobacter chlorophenolicus* A6. *Applied and Environmental Microbiology* 71:6538-6544.
- Von der Weid, I., V. Artursson, L. Seldin and J.K. Jansson. 2005. Antifungal and root surface colonization properties of GFP-tagged *Paenibacillus brasiliensis* PB177. *World Journal of Microbiology and Biotechnology* 12:1589-1595.
- Jernberg, C., Å. Sullivan, C. Edlund and J.K. Jansson. 2005. Monitoring antibiotic induced alterations in the human intestinal microflora and detection of probiotic strains by the use of T-RFLP. *Applied and Environmental Microbiology*. 71:501-506.
- Artursson, V., R.D. Finlay and J.K. Jansson. 2005. Combined bromodeoxyuridine immunocapture and terminal restriction fragment length polymorphism analysis highlights differences in the active soil bacterial metagenome due to *Glomus mosseae* inoculation of plant species. *Environmental Microbiology*. 7:1952-1956.
- Lu, Z., R. Tombolini, S. Woo, S. Zeilinger, M. Lorito and J.K. Jansson. 2004. In vivo study of Trichoderma-pathogen-plant interactions with constitutive and inducible GFP reporter systems. *Applied and Environmental Microbiology*. 70:3073-3081.
- Maraha, N., A. Backman and J.K. Jansson. 2004. Monitoring physiological status of GFP-tagged *Pseudomonas fluorescens* SBW25 under different nutrient conditions and in soil by flow cytometry. *FEMS Microbiology Ecology* 51:123-132.
- Backman, A., N. Maraha and J.K. Jansson. 2004. Impact of temperature on the physiological status of a potential bioremediation inoculant, *Arthrobacter chlorophenolicus* A6. *Applied and Environmental Microbiology*. 70:2952-2958.
- Backman, A. and J.K. Jansson. 2004. Degradation of 4-chlorophenol at low temperature and during extreme temperature fluctuations by *Arthrobacter chlorophenolicus* A6. *Microbial Ecology*. 48:246-253.
- Jansson, J.K. 2003. Marker and reporter genes: illuminating tools for environmental microbiologists. *Current Opinion in Microbiology*. 6:310-316.
- Artursson, V. and J.K. Jansson. 2003. Use of bromodeoxyuridine immunocapture to identify active bacteria associated with arbuscular mycorrhizal hyphae. *Applied and Environmental Microbiology*. 69:6208-6215. Editors choice: *Science*. 2003. 302:1117
- Jernberg, C. and J.K. Jansson. 2002. Impact of genetically modified *Arthrobacter chlorophenolicus* inoculum on soil microbial community structure during bioremediation of 4-chlorophenol contaminated soil. *FEMS Microbiology Ecology*. 42:387-397.

Books and book chapters

- Liu, W-T. and J.K. Jansson (eds) 2009. *Environmental Molecular Microbiology*. Caister Academic Press. (in press)

- Prosser, J., J.K. Jansson and W.-T. Liu. 2009. Nucleic-acid-based characterization of community structure and function. *In* Liu, W-T. and J.K. Jansson (eds) Environmental Molecular Microbiology. Caister Academic Press. (*in press*)
- Dicksved, J., L. Zhao and J.K. Jansson. 2009. Human Environment. *In* Liu, W-T. and J.K. Jansson Environmental Molecular Microbiology. Caister Academic Press. (*in press*)
- Van Elsas, J.D., J.K. Jansson and J. Trevors (eds) 2007. Modern Soil Microbiology. CRC Press, Taylor and Francis.
- Van Elsas, J.D., V. Torsvik, A. Hartmann, L. Øvreås and J.K. Jansson. 2007. The bacteria and archaea in soil. *In* J.D. van Elsas, J.K. Jansson and J. Trevors (eds). Modern Soil Microbiology. CRC Press, Taylor and Francis pp. 83-106.
- Bloemberg, G.V., A. Lagopodi, F. J. De Bruijn and J.K. Jansson. 2004. Visualisation of microbes and their interactions in the rhizosphere using auto fluorescent proteins as markers. *In* A.D.L. Akkermans, J.D. van Elsas and F.J. de Bruijn (eds) Molecular Microbial Ecology Manual, 2nd edition. Kluwer Academic Publishers. Dordrecht, Netherlands, 6.05:1257-1280.
- Jansson, J.K. 2002. Antibiotic, Chromogenic, and Luminescent Markers for Bacteria. Manual of Environmental Microbiology. ASM Press, Washington, D.C. pp. 604-614.
- Jansson, J.K., Bailey, M. and van Elsas, J.D. (eds) 2000. Tracking Genetically Engineered Microorganisms. *Biotechnology Intelligence Unit*. Landes Bioscience, EUREKAH.COM. Austin, TX. 164 pages.
- Stoltzfus, J.R., J.K. Jansson and F.J. de Bruijn. 2000. Using green fluorescent protein (GFP) as a biomarker or bioreporter for bacteria. *In* J.K. Jansson, Bailey, M. and van Elsas, J.D. (eds) 2000. Tracking Genetically Modified Microorganisms. *Biotechnology Intelligence Unit*. R.G. Landes Company, Austin, TX. pp. 101-112.
- Jansson, J.K. and F.J. de Bruijn. 1999. Biomarkers and bioreporters. *In* Arnold Demain and Julian Davies (eds) Manual of Industrial Microbiology and Biotechnology, 2nd Edition. ASM Press, Washington, D.C., pp.651-665.
- Unge, A., R. Tombolini, A. Möller, and J.K. Jansson. 1997. Optimization of GFP as a marker for detection of bacteria in environmental samples. *In* J.W. Hastings, L.J. Kricka and P.E. Stanley (eds) Bioluminescence and Chemiluminescence: Molecular Reporting with Photons. John Wiley & Sons, Sussex, UK. pp. 391-394.
- Jansson, J.K. and T. Leser. 1996. Quantitative PCR of environmental samples. *In* A.D.L. Akkermans, J.D. van Elsas and F.J. de Bruijn (eds) Molecular Microbial Ecology Manual. Kluwer Academic Publishers. Dordrecht, Netherlands, ch. 2.7.4.